

REMARKS

This paper is filed in response to the outstanding office action mailed on April 28, 2009. In that office action, the drawings, specification and claims are objected to, and claims 1-14 are rejected under 35 U.S.C. §101 as not falling within one of the four statutory categories of invention. In light of the foregoing amendments and following remarks, applicants respectfully request reconsideration and allowance of all pending claims.

Objection to the Drawings

In the outstanding office action, the Examiner objects to the drawings of FIG. 1 for not labeling element 8 thereof as “A/D” and for not labeling element 11 thereof as “D/A”. In response, applicants have withdrawn original FIG. 1 from the previous drawing sheets, and submit herewith one (1) replacement sheet including all of the necessary corrections to FIG. 1. Applicants respectfully submit that the objection to the drawings should be withdrawn.

Objection to the Specification

The Examiner additionally objects to the specification because of minor typographical informalities. Specifically, the Examiner asserts that the phrase “analog/digital” on page 7, line 14 of the specification should read “digital/analog”. Applicants have amended the specification accordingly.

The Examiner also requests copies of French Patent Application No. FR 03 09140, referred to on page 13, line 32 of the specification, as well as a copy of International Patent Application No. WO 03/101302, referred to on page 14, line 11 of the specification. French Patent Application No. 03 09140 is now published as French Publication No. 2858099 as well as U.S. Publication No. 2007/274156. International Patent Application No. 03/101302 is now published as U.S. Publication No. 2005/273008. Accordingly, applicants submit herewith copies of: (1) French Patent Application No. 03 09140 with corresponding English abstract; (2) French Publication No. 2 858 099; (3) U.S. Publication No. 2007/274156; (4) International Patent Application No. 03/101302; and (5) U.S. Publication No. 2005/273008.

Applicants respectfully submit that the objections to the specification should be withdrawn.

Claim Objections

Furthermore, the Examiner objects to claims 1-14 for informalities and inconsistencies. Specifically, the Examiner objects to claims 1-14 for failing to end with a period, using the word “suitable”, and lacking antecedent consistency with regards to the “initial signal”, “first transformed signals $K_i(t)$ ” and “second transformed signals $K'i(t)$ ”. The Examiner also objects to claim 11 for not reciting a claim from which it is to depend. Accordingly, applicants have amended each of claims 1-14 to provide appropriate punctuations where needed, remove occurrences of “suitable” and to correct the antecedent inconsistencies. Applicants have also amended claim 11 to be dependent upon independent claim 1.

The Examiner additionally asserts that the limitation of “a demodulation for eliminating a carrier signal of frequency f_0 ” of claim 4 is inconsistent with the recitation of “lowering the central frequency” of claim 1. Moreover, the Examiner asserts that the central frequency cannot be lowered, as recited in claim 1, if the carrier frequency is eliminated, as recited in claim 4. However, in accordance with MPEP 608.01(n), claim 4 is a dependent claim which serves to *further limit* the method of independent claim 1. Accordingly, and contrary to the Examiner’s assertions, the carrier frequency can be eliminated after the frequency is lowered for extracting the first set of transformed signals $K_i(t)$ from the initial signal $s(t)$. An aim of the present application is to minimize the need for processes which must be handled at relatively higher operating frequencies, and therefore, minimize the need for costly electronics. As is well known in the electronic arts, electronics which operate at higher frequencies are significantly more expensive than those which operate at lower frequencies. For instance, page 2, lines 28-32 of the specification teaches how the present application processes signals “with electronics that operate at relatively low frequency and are therefore fairly cheap.” Because the carrier frequency can be eliminated, as specified in claim 4, in addition to lowering of the central frequency, as specified in claim 1, the limitations of claim 4 are consistent with those of claim 1. Accordingly, no additional amendments are required to claims 1 and 4.

Applicants respectfully submit that the objections to claims 1-14 should be withdrawn.

Claim Rejections – 35 U.S.C. §101

In the office action, claims 1-14 stand rejected under 35 U.S.C. §101 as failing to fall within one of the four statutory categories of invention and being directed toward non-statutory subject matter. According to the memorandum dated May 15, 2008, entitled “Clarification of ‘Processes’ under 35 U.S.C. §101”, a process “must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or material) to a different state or thing” to be patent-eligible under 35 U.S.C. §101. In response, applicants have amended independent claim 1 to tie each of the pending method claims to a particular apparatus, namely, a device for transmitting and receiving waves, thereby overcoming the aforementioned rejection, as discussed more specifically below.

The present application is directed toward a method for essentially receiving a signal, temporally inverting the signal and transmitting the temporally inverted signal. More specifically, independent claim 1 specifies a first transformation for lowering the central frequency of the signal and producing a first set of transformed signals, a second transformation for producing a second set of transformed signals, and a third transformation for generating a temporal inversion signal. A particular apparatus, such as the device 1 of FIG. 1, is required to execute such steps. Page 5, lines 4-25 of the present application specifically teaches a device 1 including elements such as an electronic central unit 2, a radio wave reception antenna 3, a demodulator set 4, a modulator set 5 and a transmitter antenna 6. Such elements are commonly known in the art for use with signal processing applications and communication systems. Page 5, lines 27-29 further discloses that these elements may be included in an electronic apparatus, for example a radio telephone, a fixed radio telephone base, or the like. Accordingly, claim 1 has been amended to further tie the method to a device for transmitting and receiving waves. Support for the same is found throughout the specification. No new matter has been added.

The method of claim 1 is clearly “tied to another statutory class,” the device for transmitting and receiving waves as shown in FIG. 1, and therefore, is in accordance with the current definition of a statutory process under 35 U.S.C. §101. Applicants respectfully submit that the rejection of claims 1-14 under 35 U.S.C. §101 must therefore fail and should be withdrawn.

CONCLUSION

In light of the foregoing, applicants respectfully submit that each of the pending claims, i.e. claims 1-14, are in condition for allowance and respectfully solicit same. If a telephone call would expedite prosecution of the subject application, the Examiner is invited to call the undersigned agent. The undersigned verifies that he is authorized to act on behalf of the assignee of the present application.

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Respectfully submitted,

By: 

Robin S. O
Registration No.: 60,043
MILLER, MATTHIAS & HULL
One North Franklin Street
Suite 2350
Chicago, Illinois 60606
(312) 235-4763
Agent for Applicant